

### **Amendments to the Specification**

Please add the following new heading before paragraph [0002]:

BACKGROUND

Please add the following new heading before paragraph [0005]:

SUMMARY OF THE INVENTION

Please replace paragraph [0005] with the following amended paragraph:

[0005] The An object of the present invention is therefore to provide a method for controlling a device for treating the human eye which provides a simple overview of the effect of all the parameters.

Please replace paragraph [0006] with the following amended paragraph:

[0006] ~~This problem is solved achieved by~~ The present invention provides a method ~~according to claim 1~~ for controlling a device for an ablation of a part of a human eye using laser irradiation, the control being exercised using an electronic data processing system. The method includes the steps of determining optic and geometrical data of the eye, and performing a graphic simulation of the ablation in the form of a graphic visualization. It is provided according to the invention that once the optical and geometric eye data have been established a graphic simulation of the ablation is carried out in the form of a graphic visualization. During the graphic visualization, in particular the pachymetry of the cornea before and after the treatment procedure is represented graphically. The optical and geometric eye data are in particular thickness (pachymetry) and also the curvature of the cornea (topography). These data can be summarized for each eye in a pachymetry map and a topography map. In this way, the doctor in attendance can graphically anticipate the result of the treatment procedure and in particular recognize problem areas. In addition, problems that can be expected, such as too small a residual thickness of the cornea in part areas, can be established by the computer software used and displayed as a warning. In particular for the correction of several sight defects, an optimum parameter configuration can be discovered with the help of the method according to the invention, for example by varying one or more parameters. This makes it possible to optimize the ablation for example to a minimum

abrasion of the cornea. All the parameters can be entered or automatically recorded by means of the computer software which contains all the reciprocal relationships and which can thus calculate a correction which takes all the relevant factors into account. However the weighting and selection of the parameters is not unequivocal, but determined by various patient-specific objectives; e.g. best sight during the day, best sight at dusk, smallest corneal abrasion or similar. The computer software preferably includes an operating interface with the help of which, using the weighting presented previously, the doctor can swiftly arrive at an optimum correction. A mode can also be selected which makes possible a manual adjustment of all parameters, e.g. via scroll boxes or similar displayed on the operating interface. The effect of the parameter changes is illustrated directly via a graphic simulation of the correction.

Please replace paragraph [0013] with the following amended paragraph:

[0013] ~~The problem named at the outset is also solved by~~ The present invention furthermore provides a device for treating the human eye by means of laser irradiation comprising an apparatus for measuring aberrometry, an apparatus for measuring topography, an apparatus for measuring pachymetry, optionally an apparatus for measuring pupillometry, an apparatus for point-accurate, centred overlaying of the measurement data of all the measuring equipment of a laser unit and also an electronic data-processing apparatus which by using a treatment model can link the measurement values and further patient data to ablation values. This device preferably also includes an apparatus for measuring the pupillometry of the eye, i.e. a pupillometer. The device preferably includes a measuring equipment arrangement which allows the measurement of aberrometry, topography, pupillometry and pachymetry by means of a fixing, i.e. in a point-accurate reference of the measurement data to a centred fixed coordinates system of the eye. For this, the device has a combination of the necessary measuring instruments which make possible a measurement of the eye to be treated via a common eyepiece or overlay all separate measurement data centred vis-à-vis a location-specific coordinates system and display them together in their interaction. This is preferably carried out by determining the optical axis or the visual axis of the eye during the measurements using each individual measuring apparatus and then using these to display all the measurement data point-accurate, centred, overlaid. For this, the application of marks to the eye can be envisaged, for example colour dots to which each measuring apparatus or each measurement with the individual integrated measuring apparatus

can orientate itself and refer. It is also possible to use the texture of the iris, in particular the unchangeable areas of the iris, or the texture of the veins in the sclera, as fixed parameters during the measurement. The treatment model is realized as a software module. By treatment model is meant that the software can calculate, on the basis of the measured or manually entered parameters, the ablation for each individual point of the cornea surface. A weighting of all the measurement values or parameters is carried out by the software. The software thus represents a central recording and evaluation tool. The ablation for each point of the cornea surface produces an ablation map, i.e. a "chart" with which the surface can be displayed. The device is preferably capable of displaying the ablation for each point graphically summarized as an ablation map.

Please add the following new heading before paragraph [0015]:  
BRIEF DESCRIPTION OF THE DRAWINGS

Please add the following new heading before paragraph [0017]:  
DETAILED DESCRIPTION

On page 10, line 1, please replace the heading with the following amended heading:  
~~PATENT CLAIMS~~ WHAT IS CLAIMED IS:

**In the Abstract:**

Please amend the Abstract with the following amended Abstract:

**ABSTRACT**

~~The invention relates to a~~ A method for controlling a device for the treatment or refractive correction of the human eye ~~by means of using an electronic data processing system computer.~~  
~~The aim of the invention is to create a method for controlling a device for treating the human eye, which~~ provides a simple overview of the influence of all of the parameters. To this end, once the operating parameters have been determined, a graphical simulation of the operating procedure is carried out in the form of a graphical visualization.